What is claimed is:

1. A process for removing $Al_xF_yO_z$ oxide deposits from an aluminum-containing bond pad on a semiconductor wafer comprising the steps of:

exposing the aluminum-containing bond pad to a reactive ion etch feed gas, which is a mixture of a physical etching gas and a chemical etching gas in a reactive ion etcher;

applying energy to the reactive ion etch feed gas mixture, thereby forming an active plasma inside the reactive ion etcher, wherein the active plasma removes the fluorine contaminants from the aluminum-containing bond pad by physical etching and chemical etching.

2. A process of claim 1, wherein the physical etching gas comprises an inert gas.

3. A process of claim 1, wherein the chemical etching gas comprises a halogen containing gas.

4. A process of claim 1, wherein the reactive ion etch feed gas is $SF_6/CF_4/Ar$.

5. A process of claim 4, wherein the $SF_6/CF_4/Ar$ feed gas is provided into the reactive ion etcher in a ratio of about 5-15 sccm, 10-30 sccm, and 70-200 sccm, respectively.

6. A process of claim 4, wherein the $SF_6/CF_4/Ar$ feed gas is provided into the reactive ion etcher in a ratio of about 10 sccm, 20 sccm, and 135 sccm, respectively.

7. A process of claim 1, wherein the reactive ion etch feed gas is $Cl_2/BCL_3/Ar$.

8. The process of claim 1, wherein the reactive ion etcher is maintained at 200 mTorr and the energy applied is about 700 Watts for at least 60 seconds.

9. The process of claim 1, wherein the reactive ion etcher is maintained at 200 mTorr and the energy applied is about 700 Watts for about 120 seconds.

10. The process of claim 4, further comprising a cleaning step, the step comprising:

a low energy O_2 plasma etching for partially removing polyimide passivation layer from the wafer to remove any fluorine-based residue.

11. The process of claim 7, further comprising a cleaning step, the step comprising:

a high energy O2 plasma etching for completely removing polyimide passivation layer from the wafer to remove any chlorine-based residue.

12. A process for removing $Al_xF_yO_z$ oxide deposits from an aluminum-containing bond pad of a semiconductor wafer comprising the steps of:

disposing the aluminum-containing bond pad in a reactive ion etch chamber;

providing an atmosphere in the chamber comprising argon gas and at least one other gas, wherein the at least one other gas is capable of chemically etching $Al_xF_yO_z$ oxide deposits when the gas is in a plasma state; and

creating a plasma in the chamber, wherein the plasma reacts with the $Al_xF_yO_z$ oxide deposits, removing the $Al_xF_yO_z$ oxide deposits from the aluminum-containing bond pad by both physical etching and chemical etching.

13. A process of claim 12, wherein the at least one other gas comprises a halogen containing gas.

14. A process of claim 13, wherein the halogen containing gas is SF_6/CF_4.

15. A process of claim 4, wherein the SF_6/CF_4/Ar feed gas is provided into the reactive ion etcher in a ratio of about 5-15 sccm, 10-30 sccm, and 70-200 sccm, respectively.

16. A process of claim 4, wherein the SF_6/CF_4/Ar feed gas is provided into the reactive ion etcher in a ratio of about 10 sccm, 20 sccm, and 135 sccm, respectively.

17. A process of claim 13, wherein the halogen containing gas is Cl_2/BCL_3.

18. The process of claim 12, wherein the reactive ion etcher is maintained at 200 mTorr and the energy applied is about 700 Watts for at least 60 seconds.

19. The process of claim 12, wherein the reactive ion etcher is maintained at 200 mTorr and the energy applied is about 700 Watts for at least 120 seconds.